A DYNAMIC ANALYSIS OF YOUNG WOMEN'S FAMILY FORMATION DECISIONS*

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I. Introduction

Recent research has shown that characteristics of the family of origin (i.e., the family into which an individual was born and/or in which an individual experienced childhood and adolescence) affect the subsequent life attainments of adults. In particular, children who grow up in a household with only one biological parent are at significantly greater risk of dropping out of high school, having a child before age twenty, and being "idle" in their late teens and early twenties, as compared to children who grow up in a household with both biological parents. These results are robust across studies controlling for the parents' race and educational background, their marital status when the child was born, and their subsequent marital status. A recent focus on the effects of single parenthood on children's outcomes by social scientists, politicians, and the general public is not surprising when considering that well over half of the children born in recent cohorts will spend all or some of their childhood apart from one of their parents - nearly a third of infants born today are children of unmarried mothers, and of the children born to married parents, about 45% are expected to experience their parents' divorce before reaching age 18. The consequences of single parenthood juxtaposed with the prevalence of families headed by single parents have led to a resurgence of interest in the effects of single parenthood and the factors contributing to the intergenerational transmission of family structure.

The negative consequences associated with spending time in a single parent family may be reproduced through the intergenerational transmission of family structure. Thus, the relevant question is whether family structure is reproduced across generations. This paper examines how family structure of one generation affects the family formation decisions of the subsequent generation. In particular, the focus is the

effects of family characteristics, including measures of family structure and family income, on young women's non-marital childbearing decisions.

Non-marital childbearing among young, never-married women may be considered a low quality outcome due to the negative socioeconomic consequences associated with experiencing this event (Ribar 1994; Geronimus and Korenman 1992).[1] In particular, young mothers are less likely to finish high school, more likely to fall into poverty, and typically forgo better job opportunities and marriage prospects. Transitions to this familial role during teenage and early adult years may be especially detrimental to recent cohorts in light of the increasing wage disparity between low-skilled and high-skilled workers. To the extent that motherhood may preclude women from completing high school or college and increasing their skill sets, there is a larger opportunity cost to fertility today. The non-marital birth also has negative consequences for the child, as unwed motherhood increases the likelihood that the mother will fall into poverty, which, in turn, implies that the child will live in poverty. To the extent that the incidence of non-marital motherhood among adolescent and young adult females may be mitigated through particular policy interventions, it is imperative that research continues to study the determinants of this event.

This paper uses data from the University of Michigan's Panel Study of Income Dynamics (PSID) to empirically investigate how family structure, and especially how exposure to single parenthood, affect young women's fertility behavior. This study complements and extends previous studies on the effects of family structure on young women's family formation transitions in several ways. First, there are several

[1] Cross-sectional analyses have suggested that adolescent childbearing has severe socioeconomic consequences for young women. However, when unobserved family background heterogeneity is controlled for, the estimated effects of teen fertility on socioeconomic well being are often reduced, but nonetheless still exist.

advantages of using the PSID. The length of the panel period of the PSID allows for a relatively more comprehensive set of income controls. More specifically, it provides information on the levels and changes of family income during early childhood *and* adolescence, as opposed to previous studies that could only consider family income during a girl's adolescent years. Previous studies include rich dynamic measures of familial organization to capture detailed histories of family structure from birth through early adulthood. Although these studies recognize the need to control for income variations resulting from changes in family structure, most are plagued by lack of data. Previous studies conclude that family structure histories have a significant impact on whether females experience early transitions to family formation. It is important for policy purposes to find out if there is an independent effect of family income histories on this transition.

The PSID enables construction of dynamic measures of family structure and family income during an individual's childhood and young adulthood. Dynamic measures of family structure and family economic resources permit a contrasting and testing of the economic deprivation, socialization, social control, and instability and change hypotheses. These are four major hypotheses proposed for why children from single-parent families may be more likely to become single parents themselves.

Second, this study employs an investments-in-children framework to examine the *process* by which family structure affects young women's family formation transitions. There exists a vast body of empirical literature documenting the effects of family structure on young women's family formation decisions while there exists little empirical research on the process by which family structure affects these outcomes. An understanding of the process may be useful for designing policies aimed at discouraging early family formation transitions. In addition, this framework emphasizes that family economic resources, which affect

children's outcomes, include parental time inputs as well as monetary inputs. Most of the previous literature only considers family income as a potential economic determinant of young women's family formation transitions.

The rest of the paper is organized as follows. Section II provides a discussion of the four hypotheses and an overview of existing empirical studies on the effects of family structure on young women's non-marital childbearing. These studies are illustrative of specific key developments in the evolution of intergenerational analyses of this type. Section III discusses the theoretical framework, the data, and the empirical approach used in this analysis. Results are reported and discussed in Section IV. Concluding remarks are in Section V.

II. The Effects of Family Structure on Young Women's Non-marital Childbearing

Hypotheses

The most commonly proposed hypotheses for the effects of family structure on young women's childbearing outcomes are the socialization, social control, and instability and change hypotheses. The socialization hypothesis, usually emphasized by sociologists, stresses the importance of role models. The premise of this hypothesis is that women who grow up in non-intact families are socialized differently than women who grow up in intact families. Children's notions of appropriate behavior and their patterns of interacting are influenced from an early age by their experience in the home (Musick and Bumpass 1997). For example, the role model presented by a single mother may increase the likelihood that daughters of

single mothers, as opposed to daughters from two parent families, become single mothers when faced with a premarital pregnancy. The single mothers may make bearing or rearing children outside of marriage appear feasible, legitimate, or even desirable (Wu 1996).

Another component of the socialization hypothesis stresses the importance of the absence of the male role model in one-parent families. Proponents emphasize that it is the absence of a father figure that increases daughters' dependency on males and hence, increases the likelihood of premarital births. However, empirical research does not support the father-absence hypothesis (Musick and Bumpass 1997).

The social control hypothesis, also stressed by sociologists, focuses on the effects of family structure specifically during the adolescent years. The absence of at least one biological parent may undermine parental authority and social control of the remaining parent/guardian, thus leading children to rely more on their peers, which in turn, may lead to earlier transitions to adult roles. Indeed, single parents are found to exert less supervision and control in some domains than married parents, and stepparents are less engaged socially and emotionally with their stepchildren. Single parents, regardless of gender, appear to be structurally limited in their ability to control and make demands on children without the support of a coresident adult. Furthermore, stepparents, regardless of gender, seem to hold a different structural position in the family than biological parents. (Musick and Bumpass 1997). The social control and socialization hypotheses are competing explanations of the effects of family structure on young women's family formation transitions; the former stresses the effect of family structure *while* a girl is at risk of early family formation outcomes, whereas the latter emphasizes the effect of family structure *prior* to time at risk.

A third explanation, the family instability and change hypothesis, focuses on family events and their

consequences for family organization and dynamics. A disruption of family structure (e.g., a divorce or remarriage) may create a sense of emotional uncertainty in children and adolescents about their relationship with their parents and thus, may induce offspring in search of more stability to become sexually active prematurely which, ceteris paribus, increases the likelihood of a non-marital birth.

While there has been extensive research on the effects of family structure on the risk of a premarital birth, much less attention has been paid to the effects of economic deprivation - that young women from disadvantaged economic backgrounds may be more likely to bear a child out of wedlock than those from economically advantaged backgrounds (Wu 1996). Wu discusses and tests three economic deprivation hypotheses: (1) a low income hypothesis; (2) a permanent income and transitory income hypothesis; and (3) an income level and income change hypothesis.

The low income hypothesis is that girls from disadvantaged economic backgrounds are at a higher risk of a premarital birth because they possess fewer or less attractive economic opportunities. In other words, this hypothesis focuses on the effects of poverty itself. Single parents have less economic resources (e.g., time and money) to invest in their children, which may affect the characteristics of children as well as influence their perceptions of the parental household. Low income is associated with limited opportunities and is seen as leading young women to early parenthood as a means of escaping hardship and establishing an adult identity. Differences in marriage and fertility may be due to the different economic opportunities faced by those raised in poverty and those from more economically advantaged backgrounds. Alternatively, low family income may proxy depressed labor markets or other social conditions in poor neighborhoods. In this case, poor job prospects may lower marital prospects for women and, as a result, increase their

duration of exposure to a non-marital birth. Finally, poverty has been identified as a key factor driving the intergenerational transmission of single motherhood, when considering unwed mothers are more likely to fall into poverty and single mothers and their children have fared particularly poorly in economic terms in recent decades.

A second income hypothesis, the permanent income and transitory income hypothesis, focuses on the effects of uncertainties generated by unexpected fluctuations in family income, net of absolute income levels. Unstable economic circumstances in the family of origin will introduce uncertainties into a female's assessment of the opportunity costs of a non-marital birth (e.g., forgone education, reduced earnings, poorer marital prospects, etc.). Therefore, some women may prefer an otherwise less desirable outcome (e.g., single parenthood) that is feasible in the short term to more desirable but less certain long-term outcomes (e.g., better schooling, marital, job, or career opportunities). Hence, the greater the variability of income in the family of origin, the greater the risk of a premarital birth (Wu 1996).

A final income hypothesis, the income level and income change hypothesis, emphasizes the direction of family income change as opposed to income uncertainty. More specifically, measures of variability weigh positive and negative income deviations equally. However, positive income deviations may not have the same effect as negative income deviations of the same magnitude. Therefore, declining rather than uncertain, economic circumstances in the family of origin may increase the likelihood that an unmarried pregnant woman will prefer a known short-term outcome (i.e., bearing a child out of wedlock) over increasingly unattainable alternatives (e.g., attractive schooling, job, or career opportunities).

Previous Literature

Most of the literature on family formation transitions of young women finds that family structure of the family of origin plays a significant role. The timing of these transitions varies for children from differing family settings; women who are raised in a non-intact family (i.e., missing at least one biological parent) are more likely to have a birth before 20 years old than women raised in an intact family (Michael and Tuma, 1985; McLanahan and Bumpass, 1988, Kiernan, 1992). More specifically, women who resided with stepparents or in families with neither biological parent are more likely to make this transition at an early age than women who grew up in single parent or intact families (Michael and Tuma, 1985; McLanahan and Bumpass, 1988; McLanahan and Sandefur, 1990). In addition, women who experienced a parental marital disruption during childhood or adolescence are more likely to have a premarital birth (An, et. al., 1993). These results are found even controlling for family background factors (Michael and Tuma, 1985; McLanahan and Bumpass, 1988; McLanahan and Sandefur, 1990), the woman's own educational attainment (McLanahan and Bumpass, 1988), and economic circumstances of the family (An, et. al., 1993; Wu 1996; Haveman and Wolfe, 1994; McLanahan and Sandefur, 1994). All of these studies, despite the use of different data and various estimation methods, have concluded that family structure is a significant determinant of young women's family formation transitions.

Many of these earlier studies have attempted to test the described hypotheses and several studies have reached conclusions in support of one hypothesis in lieu of the others. However, their conclusions may be tenuous since the studies were plagued with data limitations and poor measures. For example, many of

these studies had difficulty testing the economic deprivation hypotheses since many widely used longitudinal data sets do not include accurate measures of family income during a girl's childhood and adolescence. Instead, a father's socioeconomic status (Wu and Martinson, 1993) or parents' education (McLanahan and Bumpass, 1988) served as proxies of family economic resources. These may be considered weak proxies to the extent that there is a wide income distribution within occupations as well as within education levels.

In addition, many studies used static (i.e., measured at or near age 14) measures of family structure and family characteristics when examining the intergenerational transmission of family structure, that creates several problems. One, static measures do not distinguish between distinct groups (e.g., a never-married mother-only family, a recently disrupted mother-only family, and a mother-only family with multiple disruptions) and two, they ignore changes after the age in which the variable is measured. Also, a child's cognitive and social skills change with age and hence, parental absence may have different consequences at different ages (Wu and Martinson 1993). Earlier studies that relied on static measures of family structure had difficulty distinguishing between various family structure hypotheses (e.g., socialization, social control, and instability and change). For example, the socialization hypothesis predicts that the outcomes of children of never-married mother-only families should be different than those of children of recently disrupted mother-only families, whereas the social control hypothesis predicts that the outcomes should be the same for children in any mother-only family. However, the instability and change hypothesis predicts that outcomes should be different for children of never-married mother-only families and children of mother-only families with multiple disruptions.

More recently, there have been attempts to overcome some of these limitations. McLanahan and

Sandefur (1990) incorporated dynamic measures of family structure from age 14 and over in their study of the effects of race, ethnicity, and characteristics of the family of origin on three early family formation outcomes: teen marriage, teen parenthood, and premarital parenthood. They find that characteristics of the family of origin, including family structure, appear to be important determinants of early family formation among women. However, this study misses relevant family structure and family income information during a woman's childhood and early adolescence. Family structure and family income may have a more powerful influence on these outcomes at earlier ages, when parents have more direct control over their children, than at later ages.

Measures of family structure during childhood and adolescence are constructed by Wu and Martinson (1993) to examine the relative importance of family events, family structure changes, and the duration spent in particular family structures, on the risk of a premarital birth. Family instability resulting from multiple family disruptions appears to significantly increase the risk of a teenage premarital birth. However, information on family income is not available in The National Survey of Families and Households (NSFH), thus limiting the ability of Wu and Martinson to contrast hypotheses on economic deprivation and family structure. Controlling for income is especially important since the association between frequent change in family structure and the risk of a premarital birth could be a result of changes in economic circumstances that accompany changes in family structure.

Wu (1996) uses prospective income histories in The National Longitudinal Survey of Youth (NLSY) to determine if the effect of family instability on the risk of a premarital birth is a spurious result of an accompanying change in the economic circumstances of families. However, the NLSY is a prospective

longitudinal survey of young people aged 14-21 in 1979. Therefore, this study does not include income measures during a girl's childhood and misses income measures during adolescence for some sample members.

An additional weakness of the literature is the lack of empirical research on the *process* by which family structure affects young women's family formation decisions. The loss of economic resources, less parental time available for child-rearing, and limited access to community resources, associated with family disruption are found to be significantly correlated with the higher incidence of teenage out-of-wedlock births among those whose parents divorce (McLanahan and Sandefur 1994). These results are robust across many longitudinal datasets - The National Longitudinal Survey of Youth (NLSY), The Panel Study of Income Dynamics (PSID), The High School and Beyond Survey (HSB), and The National Survey of Families and Households (NSFH), Waves I and II. However, the lack of a structural model precludes any understanding of *how* the loss of these resources affects the occurrence of a premarital birth.

Haveman and Wolfe (1994) employ a synthesized investments-in-children framework to assess the relationship between parental investments in children and the subsequent attainments of children. They find evidence that family size, family income, religion, mother's higher education, and the separation of the child's parents are significantly associated with the probability of a teenage premarital birth. Notwithstanding, an analysis of a discrete choice outcome (i.e., here, whether or not a young woman had a premarital birth) ignores the richness of the PSID data, which includes detailed timing of marital and fertility events.

This study’s analyses of the transition to first non-marital birth incorporate several of the important strengths of the above studies while addressing some of the weaknesses of each. Specifically, a nexus of

a household production model and rational choice theory is adopted to provide a structural explanation of the effect of living in a non-intact family on the risks of early family formation transitions. An advantage of a household production model is that it shows how income and time inputs, which are affected by family structure, actually affect child quality. Data from the PSID are used to contrast hypotheses on economic deprivation, family structure, and income and family instability. The PSID enables construction of dynamic measures of family structure and parental time allocations and provides detailed information on family income during an individual's childhood and young adulthood. Event history analysis of the effects of these measures on non-marital births utilizes available information on the timing of premarital births besides information on the occurrence of these events.

III. Methodology

Theory

This study adopts an investments-in-children framework to examine the effects of parental choices on young women's family formation outcomes (Haveman and Wolfe, 1994). This framework is an economic model that encompasses a variety of factors that are emphasized by economists as well as other social scientists. Essentially, this synthesized approach is a nexus of a household production model with rational choice theory. The investments-in-children perspective hinges on the proposition that all decision-makers seek to maximize their own objectives or well being and the observed decisions reflect this decision process.

A household production model is one in which the family is viewed as a production unit that

employs real inputs in order to generate utility for its members. Parents maximize either their own well being or the utility of the collective family unit by enjoying their own current consumption and investing both money and time in their children. They make decisions concerning the generation of family economic resources (e.g., labor supply) and determine the uses of those resources (e.g., consumption, asset accumulation, and investment in children). Choices regarding income, time allocation, and family structure, influence the returns to productive efforts and directly affect the well being of family members. These choices reveal parental objectives or tastes and set the environment in which their children are raised.[2] For example, such choices may include: labor supply decisions (e.g., quantity of market hours and earnings), whether or not to seek public assistance, quantity and quality of child-care time, the type of goods and services to purchase and how to allocate them across family members, and the type of family structure.

The focus of this study is the effects of family characteristics on young women's family formation transitions. Therefore, a household production model is used to examine the production function of child quality. In other words, this model enables an examination of linkages between parental decisions and circumstances (i.e., "investments" in their children) and subsequent achievements of their children. More

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2 Choices made by society via its government both *directly* and *indirectly* affect the success chances of children. Examples of choices with direct effects include decisions affecting: public school organization and performance, employment programs for youth, police efforts to reduce crime and drug use in communities, enriched child care and early education, children's food and nutrition programs, maternal and children's health programs. On the other hand, choices with indirect effects include policies that enable parents to engage in activities that benefit children, such as, a full employment economy and tax deductions for child-care purchases.

Although these choices are important, they are ignored empirically in these analyses for several reasons. First, these decisions concern "public goods" and hence, it is difficult to assign impacts of any particular policy on individual children. Second, since some are indirect efforts, it is naturally problematic to tie them to specific children. Finally, although some are direct public investments, which inherently are accountable, this information is typically not included in data sets containing rich family information on

specifically, the production function of child quality allows an examination of how various inputs (e.g., money, time, and family structure) affect young women's family formation decisions. It is assumed that the larger the value of parental resources, the greater the investment in children, and the greater the children's quality (e.g., in this case, the less likely a woman bears a child out of wedlock).

Parental investment in children is a dynamic process; it may change over time as a child grows and will almost certainly change as family structure changes. Child quality is determined by the level and instability of income and time inputs as well as an independent psychological effect of just being in a particular family structure. A household production model predicts that an increase in family income would increase child quality, while an increase in the variability of income would decrease child quality. An increase in time inputs devoted to child-rearing activities would increase child quality. An increase in a parent's market work hours, holding time devoted to non-market activities constant, would decrease time available to devote to child-rearing activities, thus, decrease child quality. However, more hours worked at the same wage would yield higher family income, thus, increase child quality. Therefore, the effect of hours worked on child quality depends on whether the income effect dominates the loss of child-care time effect. Income and time inputs are affected by family structure. For example, a single-parent family usually has less income and certainly less time available to devote to children than an intact family. Remarriages may enable increased parental time investment besides provide an additional source of monetary funds. Stressful events, such as parental separations, divorces, and remarriages, while a girl is growing up may be important determinants of her family formation decisions. Young females may opt for unwed motherhood in response to family structure instability in hopes of creating their own family stability.

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individual children.

Children are viewed as rational decision-makers that weigh the benefits and costs associated with the options available to them and make choices constrained by circumstances or limitations that affect their available options. Thus, given the constraints that they face and the information that they possess, their observable choice is viewed as the best decision from their point of view. Therefore, females observed to have a non-marital birth at a young age are presumed to have made a deliberate choice for this option.

Incomplete information regarding the costs and benefits of this option may cause a woman to make a decision she would not have made if more complete information was available to her. For example, with poor information, the out-of-wedlock birth decision is an option plagued by systematically understated costs: costs of time and money needed to raise a child and opportunity costs of forgone earnings and marriage opportunities, versus exaggerated benefits: potential psychological benefits of having one's own child (Haveman and Wolfe, 1994). Women are more likely to have more reliable information on childbearing costs, the forgone earnings and marriage opportunities associated with a non-marital birth, and the relevant costs and benefits of reproduction, work, and welfare, the more educated their parents are and the more time their parents devote to them. Hence, parental education enters into the economic model via the role of information.

Stigma costs may also play a role in the reproductive choices made by young women and should be considered in a full economic model. For example, the perceived level of stigma associated with bearing a child out of wedlock differs across ethnic groups; certain cultures may be more accepting of non-marital births. In addition, religious affiliation may influence stigma costs. These different assessments of stigma costs influence the probability of the occurrence of a non-marital birth outcome.

Thus, an investments-in-children framework can be used to examine the *process* by which family characteristics affect young women's family formation transitions. Parents make investments in their children that affect the quality of the child. Parental inputs of goods specific to the child, parental time spent with the child, and the family structure of the woman's family of origin are all inputs in the production function of child quality. Given the quality of the female child, available information, and the level of stigma costs (determined by culture or religiosity), she makes decisions concerning her family formation transitions.

An econometric specification of the investments-in-children framework enables testing of the major hypotheses discussed above. More specifically, a specification describing the effects of family background factors, family income measures, parental time inputs into children, and family structure measures, on young women's family formation transitions is necessary.

The three economic deprivation hypotheses focus on the amount of economic resources (e.g., money and time) devoted to children. In general, these hypotheses predict that the more economic resources devoted to a child, the higher the quality of the child, and the more likely she will decide not to have a non-marital birth. These hypotheses suggest that measures of the family's economic resources are primary determinants of young women's transitions to a first non-marital birth even after controlling for family background factors, the type of family structure, and the number of family structure changes.

On the other hand, the socialization, social control, and instability and change hypotheses focus on the psychological effects of family structure on the quality of children. The socialization hypothesis predicts that the type of family structure during a woman's childhood and adolescence is a significant factor in explaining the transition to single parenthood at a relatively young age. Prolonged exposure to a single-

mother family may make this family structure seem acceptable or desirable to the child and, hence, the more likely she is to have a non-marital birth. Furthermore, the absence of the male parent may make a girl more dependent on males and therefore, may increase the likelihood of a transition to a non-marital birth. Consequently, measures of family structure during childhood and early adolescence may be significant predictors of a non-marital birth outcome even controlling for other family characteristics, including family income.

The social control hypothesis predicts that exposure to a single-parent family during adolescence will lower the quality of the child as less parental supervision is possible and hence, increase the likelihood of an early transition to an adult role.[3] Therefore, a measure of single parenthood during adolescence may be a significant indicator of a premature transition to family formation, even controlling for other family characteristics, such as family structure prior to adolescence.

The instability and change hypothesis predicts that the more disruptions experienced in the family of origin, the more psychological uncertainty is felt by the child, the lower the quality of the child, and the more likely a female is to make family formation transitions at a young age. Therefore, family structure instability, measured by the number of family structure changes, should be a significant predictor in explaining an early transition to a first non-marital birth, independent of other family characteristics, including family income instability associated with family structure changes.

A wide variety of potential determinants of young women's non-marital childbearing decisions are considered in this economic model. The contributions of these factors to the family formation transition can

3 It is not clear that the presence of a stepparent helps; while he/she may provide additional supervision, he/she may actually compete with the girl for her biological parent's time.

be measured with the use of detailed survey information.

Empirical Approach

Detailed event histories are constructed for each girl in the sample and discrete-time logistic regression models are estimated. Survival analysis is used for several reasons. This type of regression not only tells us the probability that an event occurred but it also takes into account information during the time up until the event or censoring occurs. This methodology employs the richness of panel data, such as the PSID, which includes information about the timing of marital and fertility events. It also allows the examination of the effects of time-varying as well as time-invariant covariates on the probability of a non-marital birth. Thus, this methodology enables use of the constructed dynamic measures of family structure and family income that would otherwise not be able to be used in a straight logistic regression (Allison 1984).

Analyses are conducted to examine the effects of family background measures, dynamic family structure measures, and dynamic family income measures on the log odds of a non-marital birth. More specifically, the model is as follows:

$$\log (P(t)/(1-P(t)) = \alpha (t) + \beta_1 x_1 + \beta_2 x_2(t) + \beta_3 x_3(t)$$

where: P(t) is the hazard (i.e., the probability that an individual will experience an event at a particular time given that the individual has not already experienced the event prior to that point in time) of a non-marital birth, $\alpha(t)$ refers to a set of dummy variables for each year at risk of the outcome, and β_1, β_2, and β_3 are

vectors of coefficients describing the change in the logit (log-odds) for each one-unit increase in family background variables (x_1), family structure variables (x_2), and family income variables (x_3), respectively. I allow the hazard rate to change autonomously with time since I expect a persistent increase in the hazard as females age, mature physically, and possibly have more sexual experiences.

In order to estimate this model, the data must be organized in a special format. In particular, a separate observational record must be created for every year that a girl is at risk of a non-marital birth. I assume that girls become at risk of this outcome starting at age 13.[4] Therefore, every panel year that each girl is present, from the panel year in which she turns 14 until the panel year of a transition or interview, is represented as an individual record for each girl. These observations are referred to as person-years; each observation represents one year of exposure for a particular individual. Thus, girls who have a non-marital birth at age 14 contribute one person-year each, whereas, girls who experience this event at age 17 each contribute four person-years. Individuals that do not experience a non-marital birth or any other demographic transition (e.g., marriage, dropping out of the sample, entering an institution) that would cause them to drop out of the risk set, through the end of the study, contribute the maximum number of person-years, which is ten years.[5,6] The total number of person-years for the sample is equal to the cumulative sum of the number of girls at risk each year.

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4 I begin to first observe non-marital births during the panel year in which some girls are age 14. Since I know a girl's birth date but do not know the date of interview, I cannot tell when, in relation to the panel, a girl turns 14. I know only which panel year she would be age 14. Therefore, I start exposure at age 13 to ensure that I capture the actual non-marital births.

5 I do not observe any non-marital births at age 24. Therefore, for computational reasons, I censor all remaining girls at age 23.

6 Girls who leave the panel may enter the armed forces, or educational, health, correctional, or religious institutions.

Each person-year record contains the values of the explanatory variables for that year and a dichotomous dependent variable noting whether or not a non-marital birth occurred during that year. Therefore, the first person-year record for each girl would contain the values of the descriptive variables during the year that she was 14 and a dependent variable denoting the occurrence of an event. Similarly, assuming an event did not occur at age 14, a second year record would contain the explanatory variables relevant for that year and a dependent variable.

Data

The analyses in this paper use data from the 1968-1992 waves of The Panel Study of Income Dynamics (PSID).[7] The PSID is a prospective longitudinal survey consisting of a representative sample of individuals and the families in which they reside. Individual level data is found on The Twenty Fifth Year Individual File and family level data is found on The Twenty Fifth Year Family File. Merging of these two files enables event histories to be constructed for each woman in the sample. The PSID provides relatively detailed information on an individual's parental, fertility, marital, work, family income, and home-leaving, histories. An important advantage of using the PSID is that it provides information on annual family income during an individual's childhood *and* adolescent years, enabling a contrasting and testing of hypotheses on economic deprivation, family structure, and various types of instability (e.g., income and family structure).

The sample consists of girls born into a "sample family" during the years 1968-1972, who have

[7] The PSID has continued conducting annual interviews since 1992. However, the 1968-1992 data set was the most recent final release available when the analyses for the paper were being completed.

valid birth date information, valid marriage date information, and valid birth histories.[8] The 1968-1972 cohort enables an examination of girls from birth through their early adulthood (ages 20-24). All yearly variables are converted to age-indexed variables to enable comparability across women. It is important to include only girls who have "sample member" status since the PSID follows sample members if they move out of their original household. In addition, only girls who were present in a responding family from birth until at least age 13 (assumed age when a female becomes at risk of having a non-marital birth) are included in the sample. The total sample size is 552 girls.

The family formation outcome variable is constructed from fertility and marital histories. The outcome measure is a dichotomous variable noting whether or not a girl had a non-marital birth prior to interview in 1992 (N = 137 females experienced this event).

The explanatory variables for this analysis (shown with their mean values in Tables 1 and 2) can be grouped into the following categories: family background variables, family structure variables, and measures of family economic resources. Standard background variables include demographic variables such as a woman's race and religion, parental education levels, and the number of siblings in the household. Dichotomous variables are created to denote whether or not a girl is black and whether or not a girl is Catholic.[9,10] The highest grade completed in school is collected for each parent at time of the girl's birth.

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[8] A sample member is anyone living in, or temporarily away from, a family selected as part of the 1968 PSID core sample. In addition, anyone born to a sample member while that sample parent was part of a family unit interviewed in the year of birth is considered a sample member.

9 The coding of the race variable has changed over the panel years in regards to 'Latinos' and 'Others'. However, it was relatively consistent during the early years 1968-1972. The sample is composed of 223 black women, 309 white women, 14 Hispanic women, and 6 Asian women. The sample is not diverse enough to merit any distinctions further than Black and Other.

10 Although most, if not all, religious denominations encourage traditional values that include

Separate dummies are constructed for missing education data for each parent. The measure of the number of siblings in the household is constructed by subtracting one from the number of children born to a girl's mother. In addition, a dummy variable is created for missing sibling information.

The family structure and family economic resource variables consist of both *time invariant* and *time varying* measures. Time invariant variables are measures of family circumstances prior to the time that a girl is at risk of a non-marital birth. In other words, these are *aggregate* measures of the structure and economic resources of the families with which a girl lived with between her birth and age 13. In contrast, time varying variables are measures of family circumstances during the time that a girl is at risk of a non-marital birth. More precisely, these are *annual* measures of the structure and economic resources of the families that a girl has lived with between the year in which she turns age 14 and the year of her first transition (i.e., either a non-marital birth, marriage, non-response, or interview).

Following previous studies that distinguish among different types of family structure hypotheses, variables are created to operationalize the socialization hypothesis, the social control hypothesis, and the instability and change hypothesis. More specifically, several variables are constructed to operationalize the socialization hypothesis. Although the socialization hypothesis typically focuses on prolonged exposure to a mother-only family prior to an event, I construct several different measures of exposure to the various types of non-intact families between birth and age 13. As a result, these variables are time invariant measures; variables measured prior to the time a girl is at risk of a non-marital birth. I expand the typical socialization measures because I am interested in the effect of prolonged exposure to each type of non-

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proscriptions of non-marital sex and fertility, I follow previous studies and distinguish Catholic as a measure of strict adherence to these values.

intact family, prior to time at risk. The first variable is a binary one indicating whether a girl was born out of wedlock. This variable measures *early* exposure to a mother-only family. Continuous measures are also created to measure the percent of time lived in a mother-only family, a stepfamily (either a mother/stepfather family or a father/stepmother family), and other non-intact family (i.e., including a father-only family or a family with neither biological parent).[11] Furthermore, discrete measures are created for robustness tests. In particular, dummy variables note whether a girl *ever* lived in a mother-only family, a stepfamily, and other non-intact family.

Several measures of family structure during time at risk are created to operationalize the social control hypothesis. Although this hypothesis typically stresses the effects of family circumstances in the current year of an event, past history may also be relevant to current behavior. In particular, family structure may have a lagged effect, where more immediate past history may be quite effective in determining whether a girl has a non-marital birth. In other words, exposure to certain types of family structure within five years of an observed event (i.e., the four years prior to the event plus the year of the event) may provide some explanation as to why an event is observed. Therefore, dummy variables are created each year (starting at age 14) to track whether a girl lived in a mother-only family, stepfamily, or other non-intact family, *ever* in the last five years. Other variables are created in order to check the robustness of these effects. In particular, the typically used age-varying dummy variables noting whether a girl lived in a mother-only family, a stepfamily, or in an other non-intact family, are created for each year from age 14 forward. Also, continuous measures, such as the percent of time in the last five years that a girl lived in a mother-only

11 Father-only families and families with neither parent are grouped together since there is not enough variation in the data to distinguish between them.

family, stepfamily, or other non-intact family are constructed. [12]

The instability and change hypothesis is operationalized by a cumulative measure of the number of changes in family structure experienced by a girl from birth through age of transition or interview. This measure includes changes across the following types of family structure: intact, mother-only, mother/stepfather, father-only, father/stepmother, and neither parent present.

Various measures of the economic circumstances of the family in which a female resided during childhood through young adulthood are collected. They include measures of total family income, the family income-to-needs ratio, whether a family lived in poverty, the receipt of public assistance, and the parental time inputs devoted to child-care. Like the family structure measures, each of these groups of variables can be categorized into time invariant and time-varying measures.

Real total family income is constructed by first scaling nominal income in every year by $10,000 and then deflating it by the Fixed Weight Price Index for Personal Consumption Expenditures using 1987 dollars as a base year. Time invariant measures include the average, standard deviation, and growth of real total family income of the families that a girl lived with between birth and age 13. Measures constructed every year during time at risk of a non-marital birth include the annual level of real family income as well as the average, standard deviation, and growth, of real family income over the last 5 years. These time-varying measures are used to test the low income, permanent income, transitory income, and income change

[12] Variables measuring the percentage of years living in a particular type of family before time at risk and the percentage of the last 5 years lived in a particular type of family during time at risk are highly collinear. Although there exists a reasonable number of girls who experience at least one family structure change, most likely, girls who live in a mother-only family for an extended amount of time during childhood and early adolescence, continue to live in a mother-only family for a large part of their adolescent years. Therefore, I use continuous measures prior to time at

hypotheses, respectively. In addition, analyses are completed using the natural logarithm of the above income measures. These analyses are conducted to ensure that the effects of the income measures are not sensitive to log specifications.

Sensitivity tests use measures of an income-to-needs ratio, potentially a more informative measure of the economic well being of the family, than measures of the absolute family income. One measure of the economic conditions during childhood and early adolescence is the average of the family income-to-needs ratio from birth through age 13. The standard deviation of the family income-to-needs ratio over this time period is computed as a measure of family economic stability. In addition, the direction of growth of the ratio is also collected for every girl. Time-varying measures include measures of a more permanent and transitory nature. In particular, the average and standard deviation of the family income-to-needs ratio over the last five years is computed for every year from age 14 through transition or interview. The growth of the ratio over the last five years is also gathered every year as a measure of the trend of family economic conditions. In addition, the income-to-needs ratio is collected every year as a time-varying measure of the level of economic conditions in the family.

In addition to measuring the amount of family income, I construct variables to determine the poverty status of the family. In particular, I am interested in whether a girl has lived below the poverty line in any year(s) of her life leading up to a transition or interview. More specifically, I construct an age-varying dummy variable to note whether the family income-to-needs ratio is less than one in any particular year. Variables are then created to indicate the percentage of years living in poverty between birth and age 13, and for sensitivity tests, if a girl *ever* lived in poverty during these years. Time varying discrete measures

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risk and discrete measures during time at risk.

include whether a family is living in poverty in each year during time at risk and whether a family lived in poverty *ever* in the last five years. Consistent with the construction of the other family structure and income measures, the percentage of the last five years that the family lived in poverty is also created.

Furthermore, I construct measures to determine if the source of family income rather than the level of family income matters. Age-varying dummy variables are constructed noting whether the family received Aid to Families with Dependent Children (AFDC), and/or Supplemental Security Income (SSI), and/or some other type of welfare, in each year from birth through transition or interview. The time invariant measure used in the analyses is the percentage of years from birth through age 13 that the family received any type of welfare. The time-varying measure used is whether the family received any public assistance *ever* in the last five years. Additional measures are constructed for sensitivity analyses. They include whether the family *ever* received any public assistance prior to years at risk, as well as two time-varying measures: a yearly indicator of receipt of some welfare and the percentage of the last five years that some type of welfare was received by the family.

Parent's work hours are used as a proxy for the time inputs into children, since information on child-care is quite limited in the PSID.[13] An increase in market work hours, ceteris paribus, decreases the amount of time that parents can spend with their children. Although this argument may seem most relevant in terms of pre-school children, it applies for school-age children as well. More specifically, parents who are employed in some type of market work may have additional considerations, stresses, and extra responsibilities, all of which most certainly detract from time with their children. A dichotomous variable is

[13] Information on exactly how parents allocate their time is unavailable in the two files of the PSID used here. In addition, the few questions regarding child-care are only collected in selected years.

created each year to note whether both the Head and the Wife in a two parent family report positive work hours or if the Head in a single parent family reports positive work hours. Measures of parental time inputs used in the analyses include both time-invariant and time varying measures. The former includes the percentage of years that the second parent in a two-parent family or the only parent present in a single parent family, worked during childhood and early adolescence; and the latter includes whether these individuals *ever* worked in the last 5 years. Sensitivity tests were conducted with the following additional variables: whether the parent(s) *ever* worked prior to time at risk, whether the parents are working in each year during risk, and the percentage of the last five years that they worked, coded in each year at risk.

Descriptive statistics for all of the time-invariant measures used in the analyses are shown in Table 1. Table 2 contains descriptive statistics for all of the time-varying measures.

Missing values are imputed according to available information surrounding or closest to the panel period(s) with missing data. Moreover, all measures of family circumstances are lagged by twelve months, or 1 panel period, (i.e., the time between conception and observed birth is typically 9 months) to accurately reflect the conditions during the time of the start of the pregnancy.

IV. Results

Discrete-time event history models are used to examine the effects of various measures of family economic resources, family structure, and family background characteristics on the probability of a non-marital birth. Previous research tests the various family structure and income hypotheses and finds independent effects of family income and family structure instability on the risk of a non-marital birth.

Furthermore, results support a low income hypothesis as well as a declining income hypothesis. While these results are based on controls for family structure from birth through event or censoring, income is measured only during the time at risk of an event. Therefore, this paper focuses on the effects of family income history, namely, total family income prior to time at risk of a non-marital birth. Several specification tests are conducted to determine whether previously found effects of family income during time at risk are an artifact of failing to control for family income prior to time at risk. More specifically, tests are conducted using variables comparable to measures of family income during time at risk previously used to test the low income, permanent and transitory income, and income level and income change hypotheses. However, measures of family income history are included as well.

The analyses are structured in the following way. All models include the same family background characteristics and the same family structure measures, used to test the socialization, social control, and instability and change hypotheses. However, different measures of family income are used depending on which income hypothesis is being tested.[14] Table 3 shows various specification tests including income measures used to operationalize the low income hypothesis. Tables 4 and 5 examine the same specifications but use income measures created to operationalize the permanent and transitory income hypothesis, and the income level and income change hypothesis, respectively. Correspondingly, Tables 3a, 4a, and 5a contain sensitivity tests using the natural logarithm of the income measures used to operationalize the low income, permanent and transitory income, and the income level and income change hypotheses, respectively.

[14] Other models perform the same tests with the same family background characteristics and income

measures, but use different family structure measures. Results are not changed.

The various specification tests within each table are as follows. Model 1 examines the effects of family structure while controlling for real family income during time at risk whereas, the second model shows the effects of family structure while controlling for real family income prior to time at risk. The third specification includes measures of *both* income history and income during time at risk. Models 4 and 5 include measures of the variation and growth of family income appropriate for the relevant income hypothesis test, in addition to the level of family income prior to time at risk and time-varying income measures. The sixth model examines whether it is the source, rather than the level, of family income that is what matters. Finally, Model 7 examines a more comprehensive household production model; it includes measures of parental time inputs into children, in addition to measures of family structure, family income, and family background characteristics.

The effects of family structure on the probability of a non-marital birth are consistent across all seven specifications in Table 3. More specifically, family structure during time at risk appears to be an important predictor of whether a young woman will have a non-marital birth. In particular, net of family income measures, having *ever* lived in a mother-only family, stepfamily, or other type of non-intact family, relative to living in an intact family, during the five years prior to an event (four years leading up to and including the current year of event), significantly increases the odds that a young woman will have a non-marital birth. Being born out-of-wedlock increases the odds of a girl giving birth out-of-wedlock. Surprisingly, prolonged exposure to any type of non-intact family during childhood and early adolescence appears to decrease the probability that a girl will experience an event. However, with the exception of living in a father-only family or a family with neither biological parent for an extended period, the coefficients

on measures of family structure prior to risk are not significant. The same is found for the measure of family structure instability. More specifically, the more changes in family structure that a young woman experiences, the less likely she will experience a non-marital birth. Hence, evidence strongly supports the social control hypothesis and mildly contradicts the socialization hypothesis. Unlike previous research, no evidence is found for the instability and change hypothesis.

In order to determine whether previously found independent effects of family income during time at risk accurately measures the timing effects of income and not just the effects of income itself, I must first examine the effects of family income during time at risk and then the effects of family income prior to time at risk. Next, I can estimate a model including both measures. If the coefficient of family income during time at risk is significant in the first model, and significant and of a similar magnitude in the third model, then I may conclude that family income during time at risk has an independent effect on the risk of a non-marital birth and accurately reflects the timing effect of income. On the other hand, if the coefficient in the third model changes in magnitude and/or significance, then the previously found effect of income during time at risk may be an artifact of not having controlled for family income prior to time at risk. In other words, although family income may be an important predictor of experiencing this event, it is actually the timing of family income, particularly during years prior to time at risk, which may be the most relevant predictor.

Results in Model 1 show that controlling for family structure, the level of family income during time at risk significantly decreases the odds of an event; the higher the family income, the lower the probability that a young woman will bear a child out-of-wedlock. Hence, evidence supports the low income hypothesis. Model 2 shows that average family income prior to time at risk also significantly lowers the

probability of an event. Interesting results are found in Model 3 when dynamic measures of family income are included along with rich family structure measures. In particular, the average of family income prior to time at risk continues to significantly decrease the odds of a non-marital birth, whereas the coefficient on the level of family income during time at risk markedly changes in magnitude and is no longer significant. Again, evidence is found for the low income hypothesis, but results suggest that low income during a girl's childhood and early adolescence is a more effective predictor of a non-marital birth than low income during the years in which she may actually experience the event.

Given that I find strong effects of family income prior to time at risk and no longer find significant effects of family income during time at risk, I conduct two sensitivity tests. In particular, Model 4 includes a measure of the variation in family income between a girl's birth and age 13 in addition to the average of family income during those years. Results are the same as those found in the third specification. The second sensitivity analysis, Model 5, includes a measure of the growth, in addition to the average and standard deviation, of family income during childhood through early adolescence. Once again, similar results are found. Thus, it appears that average family income prior to time at risk is a significant predictor of a girl's family formation behavior during time at risk, even controlling for the variability of income and direction of income change prior to time at risk.

The consistently strong, significant effects of low income during childhood and early adolescence, lead to the question of whether it is the level or the source of this low income that matters. For example, unwed mothers are likely to live in poverty, and thus, they are more likely to receive Aid to Families with Dependent Children (AFDC). Therefore, Model 6 tests to determine if the effects of low income are

capturing the effect of actually receiving some type of public assistance (e.g., AFDC, SSI, or some other type of welfare) prior to time at risk, rather than the effect of the low level of income itself. Measures of receipt of public assistance include the percentage of the years from birth through age 13 that a girl's family received any type of welfare, as well as whether her family *ever* collected welfare in the five years prior to an event. Results show that the longer a family received any type of public assistance prior to the time at risk, the higher the odds of an event. Contrarily, welfare receipt during time at risk decreases the probability of a non-marital birth. However, this coefficient is not significant. An interesting result is that the average family income prior to time at risk is still found to significantly decrease the odds of a young woman giving birth out-of-wedlock, even controlling for the source of low income. Thus, it appears that the low level of income as well as the source of the income significantly affects the odds of the occurrence of a non-marital birth.

The final model in Table 3 shows the results for a household production model. More precisely, this model considers the effect of an additional measure of family economic resources - parental time inputs into their children. Measures of this time resource include proxy variables regarding how much the parent(s) worked. In particular, variables include the percentage of years from birth through age 13 that a single parent or second parent in a two parent household, worked, as well as whether a girl's parent(s) worked *ever* in the five years prior to an event. The more years that a girl's parent(s) worked during her childhood and early adolescence, the more likely she is to experience a non-marital birth. Although the coefficient on this variable is positive, implying that the loss of child-care time inputs outweighs the increase in family income resulting from the parent(s) working, it is not significant. The opposite effect is found for the parental

time inputs variable measured during time at risk. More precisely, the effect of an increase in family income appears to outweigh the effect of the loss of child-care time, during the years at risk. Again, results provide support for the low income hypothesis. Specifically, it is low family income during the years prior to time at risk, as well as the receipt of public assistance during those years, that significantly predict whether a girl will experience a non-marital birth.

Table 3a shows results for the same models using the natural logarithm of the average and standard deviation of real family income between birth and age 13, the growth of logged real income between birth and age 13, and logged real family income during each year at risk. Similar results are found for the family structure measures. Once again, net of family income measures, *ever* having lived in any type of non-intact family within five years of an event, relative to living with both biological parents in all five years, significantly increases the probability of a non-marital birth. The direction of the signs on the coefficients of the other family structure measures are the same as in Table3.

Results for the income measures are mostly comparable with those of Table 3, with a few exceptions. Average family income during childhood and early adolescence is consistently significant across Models 2, 3, 4, and 5. However, this variable is only marginally significant with the addition of the income source variables in Models 6 and 7. Although the coefficient on family income during time at risk is only marginally significant in Model 1, the magnitude of this coefficient is greatly reduced with the addition of average family income prior to time at risk in Model 3. Further differences between Tables 3 and 3a occur in Models 4 and 5. The standard deviation of family income is found to significantly increase the odds of an event. In other words, the higher the variability of family income prior to the time at risk, the higher the

risk of a non-marital birth.

Table 4 shows the effects of various measures of family income history, familial receipt of public assistance, and parental time inputs, in models examining the effects of measures of permanent and transitory income, family structure, and family background characteristics. More specifically, the specifications in this table show what happens to the magnitude and significance of the coefficients on the average and standard deviation of family income during time at risk when other measures of family economic resources are included.

Results in Model 1 support the permanent income hypothesis but not the transitory income hypothesis. As expected, higher permanent income significantly lowers the risk of a non-marital birth. The higher the variability of income, the less likely a young woman will experience this outcome. However, the coefficient on the variation of family income during time at risk is not significant. Higher average family income during childhood and early adolescence is also found to significantly decrease the odds of an event. Although the magnitude of this coefficient is a bit smaller, average family income prior to time at risk significantly lowers the chances that a young woman will experience a non-marital birth, even controlling for the level and variation of family income during time at risk. Moreover, the measure of average family income during time at risk is no longer significant when income history is included in the model. This result is consistent even when controlling for the variation and growth of family income prior to time at risk. However, the effect of average family income prior to time at risk becomes marginally significant when controlling for the source of income and parental time inputs. The longer a family receives public assistance during the years prior to risk, the higher the likelihood that a young woman will bear a child out-of-wedlock.

Effects of the family structure measures are similar to those found in Table 3. In particular, having *ever* lived in a mother-only family, a stepfamily, or other type of non-intact family, during the time at risk significantly increases the chances that a female will have a non-marital birth.

Although the results in Table 4a mostly mirror the results in Table 4, a few inconsistencies are present. First, none of the income measures appear to be significant in Model 3. Second, net of the level and trend of family income prior to time at risk, the standard deviation of family income appears to significantly increase the odds of an event. In addition, the effects of average family income lose significance when controlling for the source of family income and parental time inputs. It is interesting to note that Models 6 and 7 are the only models in which measures of family income during time at risk appear to significantly affect the risk of a non-marital birth, while controlling for any measures of family income history.

The models shown in Table 5 examine the effects of family structure measures, family background characteristics, and measures of family income used to test the income level and income change hypothesis, on the non-marital birth outcome. Once again, controlling for various measures of family income, family structure measures have independent effects. In particular, spending time in a non-intact family during time at risk of an event significantly increases the probability that a young woman will experience a non-marital birth.

Model 1 shows that higher family income during time at risk significantly decreases the likelihood of the occurrence of this event. Analogous to previous research, downward trends in family income are associated with higher risks of a non-marital birth. However, the effect of declining income is not significant. The average level of real family income prior to time at risk significantly lowers the odds. This latter result

is upheld even when controlling for the transitory nature of family income and the growth of family income prior to years at risk and measures of permanent income and the growth trend of income during time at risk. The level of family income variable loses significance when measures of the source of family income and parental time inputs are included. The addition of these variables indicates that the source of family income is an important predictor of whether a young woman will have a non-marital birth. In particular, the longer a girl's family received any type of public assistance prior to her teenage years, the more likely she is to experience this outcome.

Table 5a presents the specification tests using logarithmic transformations of the income variables used to test the income level and income change hypothesis. The effects of the family structure variables remain consistent, as do most of the income effects. The results in Models 1 and 2 are comparable to Models 1 and 2 in Table 5. However, Model 3 shows no effect of family income from a girl's birth through event or censoring. The remaining models result in findings similar, in terms of significance rather than magnitude, to their counterparts in Table 5. Specifically, the average level and standard deviation of family income prior to time at risk are significant predictors of the probability of a non-marital birth when controlling for the growth of family income over the same years as well as measures of the level and growth of family income during time at risk. Once again, Models 6 and 7 find the receipt of public assistance during childhood and early adolescence is positively associated with an increased risk of a non-marital birth.

The effects of family background characteristics (not shown) are relatively consistent across all models. In particular, the coefficient on race replicates the general pattern of higher non-marital births of black women relative to white women. Indeed, in this sample, black women are more than three times as

likely as white women to bear a child out-of-wedlock. Being of the Catholic faith appears to reduce the likelihood of a non-marital birth, although the coefficient on this variable is usually not significant. The more siblings a girl has, the more likely she is to make a transition to motherhood at a relatively young age. Although the coefficient on this variable is never significant, the sign is always in the same direction. The parental education variables have mixed effects. Intuitively, I would expect that the more educated are the parents, ceteris paribus, the less likely their daughters will have a non-marital birth. However, in some cases, the measure of mother's highest grade completed in school appears to increase the odds of this event. Although significant in very few cases, the magnitude of the variable is always quite low. On the other hand, the measure of father's education consistently has a negative sign, but also is never a significant predictor.

Duration measures appear to be consistent across all models. In particular, dummy variables for every year from age 15 through age 23 are estimated. The dummy variable for age 14 is the reference category. The hazard of a non-marital birth for this sample appears to increase at age 14, decrease at age 15, and then continue to rise until its peak at age 19 [figure not shown].

In summary, many models are estimated to find the effects of family structure, family income, and family background characteristics on the risk of a non-marital birth. The results show consistent effects of the addition of family income history information. In particular, the higher the level of family income prior to years at risk, the less likely a young woman is to experience this outcome. However, if she lives in some type of a non-intact family during years at risk, she may be more likely to have a non-marital birth.

V. Conclusion

This paper follows a sample of women from childhood through early adulthood to examine the effects of family structure and family income on young women's family formation transitions. A household production model is employed to examine the relationship between parental investments in their children and the outcomes of their children (here, the occurrence of a non-marital birth). Data from the PSID are used to construct dynamic measures of family structure and family income, which enables a testing of four hypotheses proposed for why children from single parent families are more likely to become single parents themselves.

Previous research has found strong independent effects of family instability and family income levels on the risk of a premarital birth (Wu 1997). This paper finds that these results are not upheld when more complete family income histories are collected. Instead, this paper does not find evidence for the family instability and change hypothesis but finds that family structure during adolescence and the average level of family income prior to time at risk are important determinants of the transition to a non-marital birth. However, measures of family income prior to risk were excluded in previous studies.

The hypotheses discussed in the paper have important implications for policy. Previous research has found large effects of family instability on the risk of a premarital birth, thus, implying a need for policies directed at family structure. The results in this paper find evidence for the economic deprivation hypothesis; the average family income prior to risk plays a significant role in determining whether or not a woman experiences a non-marital birth. In addition, there exists support for the social control hypothesis. Thus, increases in family economic resources (e.g., AFDC payments or greater enforcement of child support

payments) early in life, in addition to policies directed towards monitoring family structure, may have large effects on reducing the likelihood of early family formation outcomes, which may have negative socioeconomic consequences for young women.

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TABLE 1. Descriptive Statistics for Analysis Data Set: Time-Invariant Measures N=552

VARIABLE	MEAN	STANDARD DEVIATION
Black	0.40	0.49
Catholic	0.21	0.41
Mother's years of education	11.24	2.64
Mother's education missing	0.02	0.14
Father's years of education	9.24	5.47
Father's education missing	0.21	0.41
Number of siblings	2.42	2.14
Number of siblings missing	0.06	0.24
Born out-of-wedlock	0.17	0.37
% of years in a mother-only family (birth-age13)	0.21	0.33
% of years in a stepfamily (birth-age13)	0.06	0.16
% of years in an other non-intact family (birth-age13)	0.02	0.12
Average of real family income (birth-age13)	2.80	1.89
Log of Average real family income (birth-age13)	10.07	0.58
Standard Deviation of real family income (birth-age13)	1.03	1.10
Log of standard deviation of real family income (birth-age13)	8.99	0.65
Growth of real family income (birth-age13)	0.10	0.20
Growth of logged income (Birth-age13)	0.03	0.06
% of years family received public assistance (birth-age13)	0.17	0.29
% of years parent(s) worked (birth-age13)	0.57	0.32

NOTE: All income measures are expressed in 1987 dollars. Unlogged income measures are expressed in 10,000s.

TABLE 2. Descriptive Statistics for Analysis Data Set: Time-Varying Measures N=3608 Person-Years

VARIABLE	MEAN	STANDARD DEVIATION
Mother-only family (ever in the last five years)	0.29	0.45
Stepfamily (ever in the last five years)	0.14	0.34
Other non-intact family (ever in the last five years)	0.06	0.24
Number of family structure changes	0.65	1.09
Level of real income	4.07	5.40
Log of real income	10.22	1.03
Average of real family income (Last five years)	3.87	4.44
Log of Average real family income (last five years)	10.26	0.78
Standard deviation of real family income (last five years)	1.00	2.38
Log of standard deviation of real family income (last five years)	8.67	0.96
Growth of real family income (last five years)	-0.09	1.04
Growth of logged income (last five years)	-0.01	0.18
Family receive public assistance (ever in last five years)	0.20	0.40
Parent(s) worked (ever in last five years)	0.85	0.36

NOTE: All income measures are expressed in 1987 dollars. Unlogged income measures are expressed in 10,000s.

TABLE 3. Logistic Regressions Predicting the Occurrence of a Non-marital Birth: Effects of Low Income
(N=3608 person-years)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
Average of real family income (birth-age13)	-	**-0.42*** (0.12)**	**-0.36** (0.14)**	**-0.43** (0.17)**	**-0.44*** (0.17)**	**-0.29** (0.14)**	**-0.30** (0.14)**
Standard deviation of family income (birth- age13)	-	-	-	0.16 (0.21)	0.28 (0.23)	-	-
Growth of family income (birth-age13)	-	-	-	-	-1.11 (0.91)	-	-
Level of family income	**-0.14** (0.06)**	-	-0.06 (0.06)	-0.06 (0.06)	-0.05 (0.06)	-0.07 (0.06)	-0.07 (0.06)
% of years family received public assistance (birth-age13)	-	-	-	-	-	**0.99** (0.47)**	**1.05** (0.49)**
Family receiving public assistance (ever in the last 5 years)	-	-	-	-	-	-0.25 (0.28)	-0.24 (0.28)
% of years parent(s) worked (birth-age13)	-	-	-	-	-	-	0.17 (0.39)
Parent(s) working (ever in the last 5 years)	-	-	-	-	-	-	-0.05 (0.29)
Born out-of-wedlock	0.10 (0.55)	0.36 (0.55)	0.31 (0.55)	0.31 (0.55)	0.34 (0.55)	0.39 (0.56)	0.41 (0.56)
% years in a mother-only family (birth-age 13)	-0.17 (0.54)	-0.68 (0.56)	-0.60 (0.56)	-0.59 (0.56)	-0.75 (0.58)	-0.87 (0.57)	-0.92 (0.59)
% years in a stepfamily (birth-age13)	-0.50 (0.90)	-0.21 (0.89)	-0.27 (0.90)	-0.22 (0.90)	-0.26 (0.90)	-0.22 (0.90)	-0.25 (0.90)
% years in an other non-intact family (birth-age13)	**-2.24* (1.18)**	**-2.12* (1.20)**	**-2.21* (1.19)**	**-2.26* (1.20)**	**-2.35* (1.20)**	**-2.31* (1.21)**	**-2.35* (1.22)**
Mother-only family (ever in the last 5years)	**0.77** (0.30)**	**0.96*** (0.30)**	**0.87*** (0.31)**	**0.87*** (0.31)**	**0.86*** (0.31)**	**0.83*** (0.31)**	**0.84*** (0.31)**
Stepfamily (ever in the last 5 years)	**0.81** (0.33)**	**0.80** (0.33)**	**0.85*** (0.33)**	**0.84** (0.33)**	**0.84** (0.33)**	**0.86*** (0.33)**	**0.86*** (0.33)**
Other non-intact family	**0.93**	**1.01**	**1.02**	**1.05**	**1.06**	**0.89**	**0.90**

(ever in the last 5 years)	**(0.41)**	**(0.42)**	**(0.41)**	**(0.42)**	**(0.42)**	**(0.42)**	**(0.42)**
Number of family structure changes	-0.10 (0.12)	-0.13 (0.12)	-0.12 (0.12)	-0.13 (0.12)	-0.14 (0.12)	-0.10 (0.12)	-0.10 (0.12)
Log Likelihood	-471.61	-468.33	-467.79	-467.50	-466.81	-465.52	-465.43

NOTE: All models include controls for background characteristics and duration measures. Standard errors appear in parentheses. *Significant at the .10 level. **Significant at the .05 level. ***Significant at the .01 level

TABLE 3a. Logistic Regressions Predicting the Occurrence of a Non-marital Birth: Effects of Logged Income Measures (N=3608 person-years)

	MODEL 1	**MODEL 2**	**MODEL 3**	**MODEL 4**	**MODEL 5**	**MODEL 6**	**MODEL 7**
Average real family income (birth-age13)	-	**-0.63*** (0.24)**	**-0.59** (0.26)**	**-0.99*** (0.33)**	**-0.99*** (0.33)**	-0.41 (0.27)	-0.42 (0.28)
Standard deviation of family income (birth- age13)	-	-	-	**0.46** (0.23)**	**0.50** (0.24)**	-	-
Growth of family income (birth-age13)	-	-	-	-	-1.67 (1.72)	-	-
Level of family income	-0.14 (0.09)	-	-0.05 (0.11)	-0.02 (0.11)	-0.00 (0.12)	-0.06 (0.11)	-0.06 (0.11)
% of years family received public assistance (birth-age13)	-	-	-	-	-	**1.05** (0.48)**	**1.09** (0.50)**
Family receiving public assistance (ever in the last 5 years)	-	-	-	-	-	-0.25 (0.28)	-0.24 (0.29)
% of years parent(s) worked (birth-age13)	-	-	-	-	-	-	0.11 (0.39)
Parent(s) working (ever in the last 5 years)	-	-	-	-	-	-	-0.04 (0.29)
Born out-of-wedlock	0.10 (0.55)	0.33 (0.55)	0.30 (0.56)	0.32 (0.56)	0.37 (0.56)	0.37 (0.56)	0.39 (0.57)
% years in a mother-only family (birth-age 13)	-0.25 (0.54)	-0.64 (0.56)	-0.62 (0.57)	-0.54 (0.56)	-0.71 (0.46)	-0.89 (0.57)	-0.93 (0.59)
% years in a stepfamily (birth-age13)	-0.47 (0.90)	-0.25 (0.90)	-0.27 (0.90)	-0.18 (0.91)	-0.24 (0.91)	-0.24 (0.90)	-0.27 (0.90)
% years in an other non-intact family (birth-	**-2.15* (1.18)**	**-2.05* (1.19)**	**-2.08* (1.19)**	**-2.25* (1.20)**	**-2.33* (1.20)**	**-2.21* (1.20)**	**-2.24* (1.21)**

age13)

Mother-only family	**0.91*** **	**0.96*** **	**0.93*** **	**0.93*** **	**0.92*** **	**0.90*** **	**0.91*** **
(ever in the last 5years)	**(0.30)**	**(0.30)**	**(0.30)**	**(0.30)**	**(0.30)**	**(0.30)**	**(0.30)**
Stepfamily	**0.73** **	**0.76** **	**0.78** **	**0.74** **	**0.74** **	**0.79** **	**0.79** **
(ever in the last 5 years)	**(0.33)**	**(0.33)**	**(0.33)**	**(0.33)**	**(0.33)**	**(0.33)**	**(0.33)**
Other non-intact family	**0.93** **	**0.97** **	**0.97** **	**1.06** **	**1.07** **	**0.85** **	**0.85** **
(ever in the last 5 years)	**(0.41)**	**(0.42)**	**(0.41)**	**(0.42)**	**(0.42)**	**(0.42)**	**(0.42)**
Number of family	-0.10	-0.10	-0.10	-0.14	-0.14	-0.08	-0.08
structure changes	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Log Likelihood	-473.84	-471.38	-471.29	-469.34	-468.87	-468.86	-468.82

NOTE: All models include controls for background characteristics and duration measures. Standard errors appear in parentheses. *Significant at the .10 level. **Significant at the .05 level. ***Significant at the .01 level

TABLE 4. Logistic Regressions Predicting the Occurrence of a Non-marital Birth: Effects of Permanent and Transitory Income (N=3608 person-years)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
Average of real family income (birth-age13)	-	**-0.42*** (0.12)**	**-0.32** (0.15)**	**-0.39** (0.18)**	**-0.42** (0.18)**	-0.24 (0.15)	-0.25 (0.16)
Standard deviation of family income (birth- age13)	-	-	-	0.15 (0.21)	0.27 (0.24)	-	-
Growth of family income (birth-age13)	-	-	-	-	-1.03 (0.95)	-	-
Average of family income (last 5 years)	**-0.23** (0.09)**	-	-0.12 (0.10)	-0.11 (0.10)	-0.07 (0.11)	-0.13 (0.10)	-0.13 (0.11)
Standard deviation of family income (last 5 years)	0.10 (0.18)	-	0.09 (0.18)	0.07 (0.18)	0.05 (0.18)	0.09 (0.18)	0.09 (0.18)
% of years family received public assistance (birth-age13)	-	-	-	-	-	**1.00** (0.47)**	**1.06** (0.49)**
Family receiving public assistance (ever in the last 5 years)	-	-	-	-	-	-0.28 (0.28)	-0.27 (0.29)
% of years parent(s) worked (birth-age13)	-	-	-	-	-	-	0.16 (0.39)
Parent(s) working (ever in the last 5 years)	-	-	-	-	-	-	-0.05 (0.29)
Born out-of-wedlock	0.18 (0.55)	0.36 (0.55)	0.34 (0.55)	0.33 (0.55)	0.36 (0.55)	0.43 (0.56)	0.45 (0.57)
% years in a mother-only family (birth-age 13)	-0.25 (0.54)	-0.68 (0.56)	-0.60 (0.56)	-0.59 (56)	-0.74 (0.58)	-0.87 (0.57)	-0.92 (0.59)
% years in a stepfamily (birth-age13)	-0.41 (0.89)	-0.21 (0.89)	-0.24 (0.89)	-0.20 (0.90)	-0.24 (0.90)	-0.20 (0.90)	-0.23 (0.90)
% years in an other non-intact family (birth-age13)	**-2.21* (1.17)**	**-2.12* (1.20)**	**-2.15* (1.19)**	**-2.21* (1.20)**	**-2.30* (1.21)**	**-2.23* (1.21)**	**-2.27* (1.22)**
Mother-only family (ever in the last 5years)	**0.69** (0.31)**	**0.96*** (0.30)**	**0.83*** (0.32)**	**0.83*** (0.32)**	**0.84** (0.32)**	**0.78** (0.32)**	**0.80** (0.32)**
Stepfamily (ever in the last 5 years)	**0.87** (0.34)**	**0.80** (0.33)**	**0.86** (0.34)**	**0.85** (0.34)**	**0.84** (0.34)**	**0.88*** (0.33)**	**0.88*** (0.34)**
Other non-intact family	**0.89**	**1.01**	**0.96**	**1.00**	**1.03**	**0.83***	**0.83***

(ever in the last 5 years)	**(0.42)**	**(0.42)**	**(0.43)**	**(0.43)**	**(0.43)**	**(0.44)**	**(0.44)**
Number of family structure changes	-0.11 (0.12)	-0.13 (0.12)	-0.13 (0.12)	-0.14 (0.12)	-0.14 (0.12)	-0.11 (0.12)	-0.11 (0.12)
Log Likelihood	-470.10	-468.33	-467.65	-467.40	-466.85	-465.36	-465.27

NOTE: All models include controls for background characteristics and duration measures. Standard errors appear in parentheses. *Significant at the .10 level. **Significant at the .05 level. ***Significant at the .01 level

TABLE 4a. Logistic Regressions Predicting the Occurrence of a Non-marital Birth: Effects of Logged Income Measures (N=3608 person-years)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
Average of real family income (birth-age13)	-	**-0.63*** (0.24)**	-0.41 (0.30)	**-0.78** (0.37)**	**-0.82** (0.38)**	-0.21 (0.32)	-0.23 (0.32)
Standard deviation of family income (birth- age13)	-	-	-	**0.40* (0.24)**	**0.44* (0.24)**	-	-
Growth of family income (birth-age13)	-	-	-	-	-1.18 (1.80)	-	-
Average of family income (last 5 years)	**-0.56*** (0.20)**	-	-0.39 (0.24)	-0.30 (0.24)	-0.25 (0.25)	**-0.44* (0.26)**	**-0.45* (0.26)**
Standard deviation of family income (last 5 years)	0.16 (0.14)	-	0.17 (0.14)	0.12 (0.14)	0.12 (0.14)	0.16 (0.14)	0.17 (0.14)
% of years family received public assistance (birth-age13)	-	-	-	-	-	**1.06** (0.48)**	**1.11** (0.50)**
Family receiving public assistance (ever in the last 5 years)	-	-	-	-	-	-0.39 (0.30)	-0.39 (0.30)
% of years parent(s) worked (birth-age13)	-	-	-	-	-	-	0.14 (0.39)
Parent(s) working (ever in the last 5 years)	-	-	-	-	-	-	-0.06 (0.29)
Born out-of-wedlock	0.13 (0.55)	0.33 (0.55)	0.28 (0.56)	0.28 (0.56)	0.33 (0.57)	0.36 (0.57)	0.39 (0.57)
% years in a mother-only family (birth-age 13)	-0.34 (0.54)	-0.64 (0.56)	-0.55 (0.57)	-0.49 (0.56)	-0.62 (0.60)	-0.79 (0.58)	-0.84 (0.59)
% years in a stepfamily (birth-age13)	-0.32 (0.90)	-0.25 (0.90)	-0.20 (0.91)	-0.14 (0.91)	-0.19 (0.92)	-0.19 (0.91)	-0.22 (0.91)
% years in an other non-intact family (birth-age13)	**-2.25* (1.18)**	**-2.05* (1.19)**	**-2.16* (1.19)**	**-2.30* (1.20)**	**-2.34* (1.20)**	**-2.20* (1.20)**	**-2.23* (1.21)**
Mother-only family (ever in the last 5years)	**0.74** (0.31)**	**0.96*** (0.30)**	**0.81*** (0.31)**	**0.82*** (0.31)**	**0.83*** (0.31)**	**0.77** (0.31)**	**0.79** (0.31)**
Stepfamily (ever in the last 5 years)	**0.82** (0.34)**	**0.76** (0.33)**	**0.80** (0.34)**	**0.77** (0.34)**	**0.76** (0.34)**	**0.82** (0.34)**	**0.82** (0.34)**
Other non-intact family	**0.92** **	**0.97** **	**0.93** **	**1.02** **	**1.03** **	**0.79* **	**0.80* **

(ever in the last 5 years)	**(0.41)**	**(0.42)**	**(0.42)**	**(0.42)**	**(0.42)**	**(0.43)**	**(0.43)**
Number of family structure changes	-0.11 (0.12)	-0.10 (0.12)	-0.11 (0.12)	-0.15 (0.12)	-0.14 (0.12)	-0.09 (0.12)	-0.09 (0.12)
Log Likelihood	-470.86	-471.38	-469.96	-468.52	-468.31	-467.48	-467.41

NOTE: All models include controls for background characteristics and duration measures. Standard errors appear in parentheses. *Significant at the .10 level. **Significant at the .05 level. ***Significant at the .01 level

TABLE 5. Logistic Regressions Predicting the Occurrence of a Non-marital Birth: Effects of Income Level & Income Change (N=3608 person-years)

	MODEL 1	**MODEL 2**	**MODEL 3**	**MODEL 4**	**MODEL 5**	**MODEL 6**	**MODEL 7**
Average of real family income (birth-age13)	-	**-0.42*** (0.12)**	**-0.32** (0.16)**	**-0.40** (0.18)**	**-0.43** (0.18)**	-0.24 (0.16)	-0.25 (0.16)
Standard deviation of family income (birth- age13)	-	-	-	0.17 (0.21)	0.28 (0.23)	-	-
Growth of family income (birth-age13)	-	-	-	-	-1.05 (0.95)	-	-
Average of family income (last 5 years)	**-0.22*** (0.08)**	-	-0.10 (0.09)	-0.09 (0.09)	-0.06 (0.10)	-0.11 (0.09)	-0.11 (0.10)
Growth of family income (last 5 years)	-0.17 (0.28)	-	-0.04 (0.28)	-0.05 (0.27)	-0.00 (0.27)	-0.03 (0.28)	-0.03 (0.28)
% of years family received public assistance (birth-age13)	-	-	-	-	-	**1.00** (0.47)**	**1.06** (0.49)**
Family receiving public assistance (ever in the last 5 years)	-	-	-	-	-	-0.26 (0.28)	-0.26 (0.28)
% of years parent(s) worked (birth-age13)	-	-	-	-	-	-	0.15 (0.39)
Parent(s) working (ever in the last 5 years)	-	-	-	-	-	-	-0.05 (0.29)
Born out-of-wedlock	0.18 (0.55)	0.36 (0.55)	0.33 (0.55)	0.32 (0.55)	0.35 (0.55)	0.41 (0.56)	0.43 (0.56)
% years in a mother-only family (birth-age 13)	-0.30 (0.55)	-0.68 (0.56)	-0.61 (0.57)	-0.60 (0.56)	-0.75 (0.58)	-0.88 (0.57)	-0.92 (0.59)
% years in a stepfamily (birth-age13)	-0.40 (0.89)	-0.21 (0.89)	-0.26 (0.89)	-0.21 (0.90)	-0.24 (0.90)	-0.22 (0.89)	-0.25 (0.90)
% years in an other non-intact family (birth-	**-2.21* (1.17)**	**-2.12* (1.20)**	**-2.19* (1.19)**	**-2.24* (1.20)**	**-2.33* (1.20)**	**-2.27* (1.20)**	**-2.31* (1.22)**

age13)

Mother-only family (ever in the last 5years)	**0.73** **(0.31)**	**0.96*** **(0.30)**	**0.86*** **(0.31)**	**0.85*** **(0.31)**	**0.86*** **(0.31)**	**0.81*** **(0.31)**	**0.82**** **(0.32)**
Stepfamily (ever in the last 5 years)	**0.88*** **(0.33)**	**0.80**** **(0.33)**	**0.87**** **(0.34)**	**0.86**** **(0.34)**	**0.84**** **(0.34)**	**0.88*** **(0.33)**	**0.89*** **(0.34)**
Other non-intact family (ever in the last 5 years)	**0.93**** **(0.41)**	**1.01**** **(0.42)**	**1.01**** **(0.42)**	**1.03**** **(0.42)**	**1.05**** **(0.42)**	**0.87**** **(0.43)**	**0.88**** **(0.43)**
Number of family structure changes	-0.12 (0.12)	-0.13 (0.12)	-0.13 (0.12)	-0.14 (0.12)	-0.14 (0.12)	-0.11 (0.12)	-0.11 (0.12)
Log Likelihood	-470.05	-468.33	-467.76	-467.45	-466.88	-465.47	-465.39

NOTE: All models include controls for background characteristics and duration measures. Standard errors appear in parentheses. *Significant at the .10 level. **Significant at the .05 level. ***Significant at the .01 level

TABLE 5a. Logistic Regressions Predicting the Occurrence of a Non-marital Birth: Effects of Logged Income Measures (N=3608 person-years)

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7
Average of real family income (birth-age13)	-	**-0.63*** (0.24)**	-0.35 (0.31)	**-0.76** (0.38)**	**-0.79** ().38)**	-0.16 (0.32)	-0.17 (0.33)
Standard deviation of family income (birth- age13)	-	-	-	**0.44* (0.24)**	**0.47** (0.24)**	-	-
Growth of family income (birth-age13)	-	-	-	-	-0.96 (1.83)	-	-
Average of family income (last 5 years)	**-0.45*** (0.16)**	-	-0.30 (0.22)	-0.25 (0.21)	-0.20 (0.23)	-0.34 (0.23)	-0.34 (0.23)
Growth of family income (last 5 years)	-0.64 (0.48)	-	-0.55 (0.49)	-0.53 (0.48)	-0.48 (0.49)	-0.50 (0.49)	-0.50 (0.49)
% of years family received public assistance (birth-age13)	-	-	-	-	-	**1.07** (0.48)**	**1.12** (0.50)**
Family receiving public assistance (ever in the last 5 years)	-	-	-	-	-	-0.33 (0.29)	-0.33 (0.30)
% of years parent(s) worked (birth-age13)	-	-	-	-	-	-	0.12 (0.39)
Parent(s) working (ever in the last 5 years)	-	-	-	-	-	-	-0.04 (0.29)
Born out-of-wedlock	0.13 (0.55)	0.33 (0.55)	0.25 (0.56)	0.26 (0.56)	0.30 (0.56)	0.32 (0.57)	0.34 (0.57)
% years in a mother-only family (birth-age 13)	-0.44 (0.55)	-0.64 (0.56)	-0.61 (0.57)	-0.54 (0.57)	-0.64 (0.60)	-0.86 (0.57)	-0.90 (0.59)
% years in a stepfamily (birth-age13)	-0.39 (0.89)	-0.25 (0.90)	-0.29 (0.90)	-0.21 (0.91)	-0.24 (0.91)	-0.29 (0.90)	-0.31 (0.90)
% years in an other non-intact family (birth-age13)	**-2.30* (1.18)**	**-2.05* (1.19)**	**-2.21* (1.19)**	**-2.38** (1.20)**	**-2.41** (1.20)**	**-2.28* (1.19)**	**-2.30* (1.20)**
Mother-only family (ever in the last 5years)	**0.80*** (0.31)**	**0.96*** (0.30)**	**0.85*** (0.31)**	**0.85*** (0.31)**	**0.85*** (0.31)**	**0.81*** (0.31)**	**0.82*** (0.31)**
Stepfamily (ever in the last 5 years)	**0.88*** (0.34)**	**0.76** (0.33)**	**0.86** (0.34)**	**0.81** (0.34)**	**0.80** (0.34)**	**0.87** (0.34)**	**0.88*** (0.34)**
Other non-intact family	**1.00** **	**0.97** **	**1.00** **	**1.08** **	**1.08** **	**0.86** **	**0.87** **

(ever in the last 5 years)	**(0.42)**	**(0.42)**	**(0.42)**	**(0.42)**	**(0.42)**	**(0.43)**	**(0.43)**
Number of family structure changes	-0.12 (0.12)	-0.10 (0.12)	-0.11 (0.12)	-0.15 (0.12)	-0.15 (0.12)	-0.09 (0.12)	-0.09 (0.12)
Log Likelihood	-470.72	-471.38	-470.08	-468.31	-468.17	-467.60	-467.55

NOTE: All models include controls for background characteristics and duration measures. Standard errors appear in parentheses. *Significant at the .10 level. **Significant at the .05 level. ***Significant at the .01 level